Below is a complete listing of all claims ever presented in this application, including the text of all pending and withdrawn claims.

Claims 1-13 were cancelled and replaced by claims 14-23 in October 2004. Claims 14-23 were cancelled in June 2006. Claims 29-33 are withdrawn, since they were not elected in a response to a restriction requirement mailed in October 2006.

1 (Canceled): A membrane segment for use in surgically treating a segment of damaged cartilage in a mammalian joint, comprising a membrane segment which is porous and hydrophilic and which is permeable to water and to low molecular weight nutrients that are present in mammalian synovial fluid, but which is not permeable to surface-active phospholipids, wherein the membrane segment:

a. is maintained during storage and shipping in a sealed package which ensures sterility of the membrane until use in a surgical procedure;

b. is suited in all respects for implantation into a mammalian joint in a surgical procedure;

c. allows permeation of water and nutrients into cartilage tissue which underlies the membrane segment following surgical implantation; and,

d. has an anchoring surface suited for placement in direct contact with a condyle, and a second opposed surface which will remain exposed as an articulating surface after the membrane segment has been anchored to a bone,

wherein the articulating surface has a pore structure which causes the membrane segment to interact with hyaluronate molecules and surface-active phospholipid molecules in mammalian synovial fluid, in a manner which (i) prevents permeation of the hyaluronate molecules and surface-active phospholipid molecules through the membrane segment; (ii) prevents clogging of pores in the articulating surface by hyaluronate molecules or surface-active phospholipid molecules; and (iii) sustains proper lubrication of the articulating surface of the membrane segment by synovial fluids, when compressive forces are imposed on the mammalian joint.

2 (Canceled): The membrane segment of Claim 1, wherein the membrane segment is affixed to a resorbable implantable scaffold which supports chondrocyte cell growth and cartilage secretion when anchored to a bone or cartilage surface.

3 (Canceled): The membrane segment of Claim 1, wherein the membrane segment is designed to be trimmed to a desired size and shape and then secured directly onto a damaged surface area on a segment of native cartilage.

4 (Canceled): The membrane segment of Claim 1, wherein the membrane segment comprises collagen fibers.

5 (Canceled): The membrane segment of Claim 1, wherein the membrane segment comprises a synthetic polymer.

6 (Canceled): The membrane segment of Claim 1, wherein the membrane segment comprises a copolymeric blend of poly-vinyl alcohol and poly-vinyl pyrrolidone.

7 (Canceled): The membrane segment of Claim 1, which also contains fibers that extend outwardly from the anchoring surface and which promote secure attachment of the membrane to an underlying surface.

8 (Canceled): The membrane segment of Claim 1, which is created by steps comprising surface treatment of a thick permeable material in a manner which creates a toughened surface layer.

9 (Canceled): A method of repairing a cartilage defect in an articulating joint, comprising surgical implantation of a membrane segment of Claim 1 onto a cartilage defect surface area in the joint.

10 (Canceled): The method of Claim 9, wherein the membrane segment is seeded with cartilage-secreting cells or stem cells prior to surgical implantation.

11 (Canceled): The method of Claim 9, wherein the device is seeded with cartilage-secreting cells or stem cells during a surgical implantation procedure.

12 (Canceled): A membrane segment for use in surgically treating an internal organ in conjunction with a resorbable cell-growing matrix, comprising a membrane segment which is porous and hydrophilic and which is permeable to water and to low molecular weight nutrients dissolved in water, wherein the membrane segment:

a. is maintained during storage and shipping in a sealed package which ensures sterility of the membrane until use in a surgical procedure;

b. is suited in all respects for implantation into a mammalian body in a surgical procedure;

c. has little or no permeability to biological compounds having a molecular weight greater than about 5000 daltons;

d. has an anchoring surface suited for direct contact with a resorbable cell-growing matrix that can be seeded with viable cells, and a second opposed surface which will remain internally exposed, on a surface of an internal organ, after the resorbable cell-growing matrix has been implanted in a body.

13 (Canceled): A resorbable cell-growing matrix for use in

surgically treating an internal organ, wherein at least one surface of the resorbable cell-growing matrix is covered by a membrane segment which is porous and hydrophilic and which is permeable to water and to low molecular weight nutrients dissolved in water.

14 (Canceled): An implant device for surgical insertion into a mammalian articulating joint, comprising a synthetic polymeric hydrogel material with a treated surface layer, wherein the treated surface layer is hydrophilic and permeable to water and interacts with hyaluronate molecules and surface-active phospholipid molecules in synovial fluid in a manner that: (i) prevents permeation of the hyaluronate molecules and surface-active phospholipid molecules through the treated surface layer; (ii) prevents clogging of pores in the treated surface layer by hyaluronate molecules or surface-active phospholipid molecules; and (iii) sustains proper lubrication of the treated surface layer of the membrane segment by synovial fluids, when compressive forces are imposed on the mammalian joint.

15 (Canceled): The implant device of Claim 14, wherein the treated surface layer is created by surface treatment of a synthetic polymeric hydrogel material.

16 (Canceled): The implant device of Claim 15, wherein the surface treatment of the synthetic polymeric hydrogel material utilizes chemical treatment of a synthetic polymeric hydrogel material.

17 (Canceled): The implant device of Claim 14, wherein the surface treatment of the synthetic polymeric hydrogel material utilizes temperature treatment of a synthetic polymeric hydrogel material.

18 (Canceled): The implant device of Claim 14, wherein the surface treatment of the synthetic polymeric hydrogel material utilizes radiation treatment of a synthetic polymeric hydrogel material.

19 (Canceled): A method of repairing a cartilage defect in an articulating joint, comprising surgical implantation of an implant device comprising a synthetic polymeric hydrogel material with a treated surface layer, wherein the treated surface layer is hydrophilic and permeable to water and interacts with hyaluronate molecules and surface-active phospholipid molecules in synovial fluid in a manner that: (i) prevents permeation of the hyaluronate molecules and surface-active phospholipid molecules through the treated surface layer; (ii) prevents clogging of pores in the treated surface layer by hyaluronate molecules or surface-active phospholipid molecules; and (iii) sustains proper lubrication of the treated surface layer of the membrane segment by synovial fluids, when compressive forces are imposed on the mammalian joint.

20 (Canceled): The method of Claim 19, wherein the treated surface layer is created by surface treatment of a synthetic polymeric hydrogel material.

21 (Canceled): The method of Claim 20, wherein the surface treatment of the synthetic polymeric hydrogel material utilizes chemical treatment of a synthetic polymeric hydrogel material.

22 (Canceled): The method of Claim 20, wherein the surface treatment of the synthetic polymeric hydrogel material utilizes temperature treatment of a synthetic polymeric hydrogel material.

23 (Canceled): The method of Claim 20, wherein the surface treatment of the synthetic polymeric hydrogel material utilizes radiation treatment of a synthetic polymeric hydrogel material.

24 (Currently amended): A non-resorbable implant ~~synthetic membrane segment,~~ for surgically ~~treating~~ replacing damaged cartilage in a mammalian joint, ~~comprising a~~ wherein said non-resorbable implant is made of a hydrogel material having at least one articulating surface, wherein at least a portion of said articulating surface is covered by a synthetic membrane segment made of a non-resorbable ~~synthetic~~ polymer, wherein said membrane segment is hydrophilic and permeable to water but is not permeable to surface-active phospholipids or hyaluronate molecules of mammalian synovial fluid, and wherein said ~~membrane segment has at least one surface suited for use as an articulating surface in a joint,~~ articulating surface is designed to interact with water, surface-active phospholipid molecules, and hyaluronate molecules in natural synovial fluid, after surgical implantation into a joint, in a manner that sustains lubrication of said articulating surface ~~by said water, surface-active phospholipid molecules, and hyaluronate molecules~~.

25 (Currently amended): The ~~synthetic membrane segment~~ non-resorbable implant of Claim 24 wherein the synthetic membrane segment is ~~affixed to a resorbable implantable scaffold that will support chondrocyte cell growth and cartilage regeneration after said implantable scaffold is surgically anchored to a bone or cartilage surface~~ created by chemical treatment of at least one

surface of said hydrogel material.

26 (Currently amended): The ~~synthetic membrane segment~~ non-resorbable implant of Claim 24 wherein the synthetic membrane segment is ~~designed to be trimmed to a desired size and shape and then secured directly onto a damaged surface area on a segment of native cartilage~~ fabricated and then affixed to a synthetic hydrogel material, during manufacture of said implant.

27 (Currently amended): The ~~synthetic membrane segment~~ non-resorbable implant of Claim 24 which also contains fibers that extend outwardly from an anchoring surface and which promote secure attachment of the membrane to an supporting material.

~~28 (Canceled): The synthetic membrane segment of Claim 24 which is created by steps comprising surface treatment of a thick permeable material in a manner that creates a modified surface layer.~~

29 (Withdrawn): A method of repairing a cartilage defect in a mammalian joint, comprising surgical implantation of a membrane segment onto a damaged cartilage area in the joint, wherein the membrane segment is made of a synthetic polymer that is hydrophilic and permeable to water but is not permeable to surface-active phospholipids or hyaluronate molecules, and wherein said membrane segment is designed to sustain lubrication of said membrane segment by water, surface-active phospholipid molecules, and hyaluronate molecules in natural synovial fluid, after surgical implantation.

30 (Withdrawn): The method of Claim 29, wherein the membrane segment is seeded with cartilage-secreting cells or stem cells prior to surgical implantation.

31 (Withdrawn): The method of Claim 29, wherein the device is seeded with cartilage-secreting cells or stem cells during a surgical implantation procedure.

32 (Withdrawn): A synthetic membrane segment for use in surgically treating an internal organ in conjunction with a resorbable cell-growing matrix, comprising a membrane segment made of a synthetic polymer that is porous, hydrophilic, and permeable to water and to low molecular weight nutrients dissolved in water, wherein the membrane segment:

a. is maintained during storage and shipping in a sealed package which ensures sterility of the membrane segment until use

in a surgical procedure;

b. is suited in all respects for implantation into a mammalian body in a surgical procedure;

c. has little or no permeability to biological compounds having a molecular weight greater than about 5000 daltons;

d. has a first anchoring surface that is designed for direct contact with a resorbable cell-growing matrix that can be seeded with viable cells, and a second opposed surface that will remain internally exposed on a surface of an internal organ, after the resorbable cell-growing matrix and the synthetic membrane segment have been surgically implanted in a body.

33 (Withdrawn): A resorbable cell-growing matrix for use in surgically treating an internal organ, comprising at least one surface covered by a synthetic membrane segment that is porous and hydrophilic and that is permeable to water and to low molecular weight nutrients dissolved in water.

34 (New): A hydrogel material, wherein said hydrogel material is synthetic and nonresorbable, and is designed and suited for replacing damaged cartilage in a mammalian joint, and wherein said hydrogel material has at least one articulating surface that has been provided with a surface layer that is hydrophilic and permeable to water but not permeable to surface-active phospholipid or hyaluronate molecules in mammalian synovial fluid.

35 (New): The hydrogel material of Claim 34, wherein said surface layer is created by chemical treatment of at least one surface of said hydrogel material.

36 (New): The hydrogel material of Claim 34, wherein said surface layer is manufactured, and then affixed to said hydrogel material.